

Exhibit C

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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION**

United States of America, *et al.*,

Plaintiffs,

v

Google LLC,

Defendant.

Case No. 1:23-cv-00108

HON. LEONIE H. M. BRINKEMA

**EXPERT REBUTTAL REPORT OF
WAYNE D. HOYER, PH.D.**

FEBRUARY 13, 2023

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12. My findings are based on information available to me at the time this report was prepared. A list of documents I relied upon is listed in Appendix C. I reserve the right to supplement my opinions and conclusions should data, documents, testimony, or other materials become available after filing this report.
13. I am being compensated \$850 per hour for my time in this matter. Part of the work in this matter was conducted under my direction by employees of The Brattle Group, an economic consulting firm. My compensation is not contingent on the nature of my findings, opinions, or conclusions, or on the outcome of this case.

I.C. Summary of Opinions

14. Upon reviewing Prof. Simonson's report and surveys, I have concluded that the surveys conducted by Prof. Simonson contain serious flaws that make the survey results unreliable. In particular:
 - a. Prof. Simonson neither identified the correct target population, nor did he sample it in a methodologically sound manner.
 - i. Prof. Simonson's screener limited his sample to only those respondents who indicated that the company they work for "sells products or services and advertises/markets its products or services." Critically, based on this definition, Prof. Simonson may have excluded relevant advertisers, mainly in his Higher-Spend Advertiser Survey, that worked for companies that did not sell products or services but nonetheless still use display advertising (e.g., non-profits, advocacies, educational institutions, state and federal agencies).
 - ii. Prof. Simonson's surveys are inconsistent about whose behavior and beliefs they seek information. For example, the Higher-Advertiser Survey alternates between asking respondents about themselves, their business unit/team, and their company as whole. This was likely confusing to some respondents. As a result, some respondents may have answered the survey from the perspective of their business unit/team whereas others may have answered the survey from the perspective of the whole company, rendering the survey results unreliable.

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- iii. In each of Prof. Simonson's three surveys, the largest, or second-largest group of respondents are self-reported C-Level executives (24 percent in the Higher-Spend Advertiser Survey; 38 percent in the Lower-Spend Advertiser Survey; and 37 percent in the Ad Agency Survey). Prof. Simonson does not offer any reasoning or intuition for why such a substantial number would be willing to dedicate time completing an on-line survey, nor does he discuss what this might say about the quality of his data and reliability of his survey results.
 - iv. Based on his pre-screening criteria, Prof. Simonson excluded a total of 580 companies from his surveys, including 30 of the Fortune 100 companies, five of the ten largest companies by revenue, the six largest global ad agencies, as well as nine of the 15 companies that Google considers to be "Top Whales." Prof. Simonson's inbound sample also excluded more than 50 of the 200 top advertisers in 2022, including nine of the top ten from his underlying ADPROs panel. The exclusion of numerous companies that are top advertising spenders and revenue generators for Google brings into question the representativeness of the advertiser samples in Prof. Simonson's surveys with respect to U.S. advertisers.
- b. Responses to the main questions in Prof. Simonson's surveys are unreliable because (1) they include questions that are flawed, and (2) Prof. Simonson informed respondents of the sponsor and purpose of the survey after respondents had completed the surveys and then offered respondents the choice to exclude their responses. In particular:
- i. Prof. Simonson's key question on diversion, where he asks respondents how they would respond if the cost of display advertising "increased by a small but significant amount," is flawed because:
 - (1) The question leaves it up to each respondent to interpret in their own way what is being asked. While variation in responses to the same question can help identify what survey respondents believe, differences in respondents' interpretations of what a question is asking make the survey data unreliable.
 - (2) By using loaded words like "significant" and "elevated," the question risks creating a demand artifact (or demand effect), which occurs when a question causes respondents to perceive and act upon what they believe is expected or desired of them by the

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surveyor. Furthermore, the question presents an unrealistic marketplace scenario by solely focusing the respondents on the cost of display advertising and that of other digital advertising types. Critically, Prof. Simonson fails to mention any of the several other factors that drive the choice of an advertising tool, much less what respondents should assume about these factors when providing their responses. Taken together, the biased wording and prompt to focus solely on cost could lead respondents to perceive the “correct” answer as being that they should divert spending away from display advertising.

- ii. Prof. Simonson claims without any basis that “there is no reason to expect the respondents who chose, at the conclusion of the survey, to not be included in the final sample to be different from the other respondents.” To the contrary, that respondents took the time to complete the survey but then choose to be excluded once they learned that the survey was sponsored by Google in the context of a litigation suggests that these respondents must have differed systematically from those who chose to include their responses in the survey. That a higher percentage of respondents in the Lower-Spend Advertiser Survey chose to exclude their surveys relative to respondents in the Higher-Spend Advertiser Survey suggests that at the least, advertisers who excluded their responses were systematically different from those who chose to include their responses based on their total ad spend.
- c. Prof. Simonson’s survey data indicate that a substantial number of his respondents likely did not pay close attention to the questions and/or instructions, leading to considerable noise and inconsistent responses in the surveys. In particular:
 - i. Across the three surveys, data indicate that respondents were indeed likely not paying attention or providing meaningful responses, evidenced by (1) potential instances of straight-lining, where respondents checked every answer option for a given question; and (2) inconsistent responses across different questions.
 - ii. Ten percent of the respondents in the Higher-Spend Advertiser Survey completed the survey in approximately three minutes (i.e., allowing for approximately 5.0 seconds per question) and 25 percent in under six and half minutes (i.e., 10.2 seconds per question). Similarly in the Lower-Spend Advertiser Survey and Ad Agency Survey, ten percent of

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the samples completed the survey in under three minutes 46 seconds (i.e., 7.3 seconds per question) and under approximately four minutes (i.e., 6.3 seconds per question), respectively. It is questionable whether respondents could read all the questions, let alone provide meaningful answers after loading up to 39 online survey screens. It is more plausible that these respondents did not pay close attention to the questions and/or instructions.

- d. In addition to the methodological flaws in survey design, Prof. Simonson's interpretations of his survey findings are misleading or incomplete. In particular:
 - i. Prof. Simonson overstates potential substitutability and diversion across different types of digital advertising. For example, for his "Share of Higher-Spend Advertisers Who Would Divert Spending to Each Advertising Type," he reports the relevant statistic as 54 percent. However, this 54 percent does not represent 54 percent of all respondents, but rather 54 percent of the 59 percent of respondents who indicated they would divert some of their spending in response to cost increase (i.e., only 32 percent of all respondents). He makes similar misleading claims for his Lower-Spend Advertiser Survey and for his Ad Agency Survey.
 - ii. Prof. Simonson's claim that the majority of respondents who use Google's ad buying tool also use one or more other non-Google ad buying tools is, at best, incomplete, and at worst, misleading. Prof. Simonson's survey did not collect any data on the volume or frequency with which respondents used the different ad-buying tools. As such, he is unable to rule out the possibility that a large proportion of the respondents' ad spend was devoted to Google products with only a minor amount to these other tools.
 - iii. Prof. Simonson's "Key Implication" that display advertising "accounts for a relatively small portion of...advertisers' digital ad spending" is misleading because he omits the fact that in all three surveys, respondents indicated that display ads account for the biggest portion of the budget across all types of digital advertising
- e. All three of Prof. Simonson's surveys fail to inform on, what I understand to be two key issues in this case—multi-homing and diversion:
 - i. Prof. Simonson's conclusion that advertisers multi-home across different types of display ad buying tools is unsubstantiated. It is based on his survey respondents' indications that

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they had “used [two or more buying tools] during the past year for programmatic display advertising...” However, based on this question alone, Prof. Simonson cannot rule out the possibility that advertisers could have relied on a single display ad buying tool but tested, and rejected, one or more additional ad buying tools in the past 12 months. Concluding that these advertisers multi-homed across different types of display advertising buying tools is misleading.

- ii. I understand that the cost of display advertising itself is not at issue in this matter. Rather, what is relevant is the portion of those costs that corresponds to specific ad tech tools that advertisers use to transact programmatic display advertising. Because the cost of a particular ad buying tool comprises only one part of the total cost of programmatic display advertising, a “small but significant” increase in the cost of a particular ad buying tool would result in a much smaller increase than a small but significant increase in the “cost of programmatic display advertising.” Because Prof. Simonson’s scenario both fails to inquire about the cost of particular ad buying tools (as opposed to the entire cost of display advertising), and artificially inflates the relevant “small but significant” cost increase perceived by respondents, his survey findings and conclusion on diversion are unsupported.
- f. Prof. Simonson relied on 14 preliminary interviews and between three and five pretests for each of his three surveys. He failed to produce the necessary underlying data and/or documents that would allow for a complete evaluation of the decisions and changes he made regarding each of his surveys. Based on my review of the interview guide/scripts, the 14 preliminary interviews and pretests did not follow some survey best practices. For example, the preliminary interviews began by informing (and therefore potentially biasing) the interviewees of the purpose and sponsor of the survey. The pretests required respondents to retrospectively consider as many as 39 survey questions and remember if (and how) they found any questions or instructions to be unclear or leading.

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budgets for digital display and/or which buying tools or demand-side platforms to use for digital display ads (QS15).³⁰ Additional questions were included to screen out potentially fraudulent or inattentive responses.³¹ In the event a respondent did not answer in line with screening criteria, the respondent was terminated from the survey.

II.B.1.b. Main Survey Questions

29. Respondents who continued to the main survey were informed that they were “selected to answer questions about advertising practices used by [their] business unit, or the team [they] work on.”³² Respondents were instructed that they should continue the survey without stopping, not consult others during completing the survey, and not open other browsers during the survey.³³ Additionally, the instructions reiterated that respondents should not guess on questions when uncertain or unsure or attempt to go backward in the survey.
30. Questions in the main questionnaire were broken out into different sections, with the following focuses:
 - a. **Use of Ad Agencies:** Questions in this section focused on respondents’ use of ad agencies, whether the ad agencies were leveraged for digital ads and what specific functions the agencies filled.³⁴
 - b. **Budget Allocation and Substitution:** Questions in this section focused on digital advertising and substitution. Respondents were initially asked to estimate the relative shares of their business unit’s/team’s budget allocated to different forms of digital advertising.³⁵ Respondents were then asked whether their spending would change in response to a “small but significant” increase in the cost of display advertising, and if so, to which other forms of

³⁰ Simonson Report, Appendix F.1, at F.1-1 to F.1-9.

³¹ QS14 included a decoy response option with a fictitious social media option and QS16 was an attention check question. *See* Simonson Report, Appendix F.1, at F.1-9 to F.1-10.

³² Simonson Report, Appendix F.1, Q1, at F.1-11.

³³ Simonson Report, Appendix F.1, Q1, at F.1-11.

³⁴ Simonson Report, Section IV.B.2., ¶¶ 60–61 and Appendix F.1, Q2–Q3, at F.1-11.

³⁵ Simonson Report, Appendix F.1, Q4, at F.1-12.

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received subpoenas in connection with...” cases related to the current matter.¹⁰⁷ Based on this pre-screening criteria, and as listed in Appendix I of the Simonson Report, there are a total of 580 companies that Prof. Simonson excluded from his surveys.

66. Prof. Simonson’s no contact list is not a random list of companies. To begin with, it includes 30 of the Fortune 100 largest companies by revenue, of which five are in the top 10.¹⁰⁸ The exclusion of numerous companies that are top advertising spenders and revenue generators for Google brings into question Prof. Simonson’s claim that his inbound sample was representative of the U.S. advertiser population, accounting for the vast majority of spending. To the extent that the excluded companies encompass some of the nation’s largest advertisers, their absence makes the underlying sample unrepresentative of the broader U.S. advertiser population. Consequently, Prof. Simonson cannot draw conclusions about U.S. advertisers from his surveys. As a well-known treatise on the use of surveys in litigation notes, when “[t]he sampling frame excludes part of the target population...the survey’s value depends on the proportion of the target population that has been excluded from the sampling frame and the extent to which the excluded population is likely to respond differently from the included population.”¹⁰⁹ Furthermore “[i]f the sampling frame does not include important groups in the target population, there is generally no way to know how the unrepresented members of the target population would have responded.”¹¹⁰
67. In fact, a closer review of the excluded companies suggests that Prof. Simonson’s inbound sample was also unlikely to account for the vast majority of spending among U.S. advertiser population. In particular:
- a. Cross-checking Prof. Simonson’s list of excluded advertisers against the largest digital advertisers across 12 industries (based on ad-spend from 2021 to 2023), I find that six of the top ten retailers and 27 of the largest digital advertisers across various industries were

¹⁰⁷ Simonson Report, Section III.B., ¶ 34.

¹⁰⁸ See Simonson Report, Appendix I; see also, “Fortune 100 Companies List (Updated 2023),” *Finasko*, accessed February 3, 2024, <https://finasko.com/fortune-100-companies/> and “Fortune 500,” *Fortune*, June/July 2023, <https://fortune.com/ranking/fortune500/>.

¹⁰⁹ Shari Seidman Diamond, “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, 3rd ed. (Washington, DC: The National Academies Press, 2011), at 378.

¹¹⁰ See, Shari Seidman Diamond, “Reference Guide on Survey Research,” *Reference Manual on Scientific Evidence*, 3rd ed. (Washington, DC: The National Academies Press, 2011), 379.

excluded from Prof. Simonson’s survey.¹¹¹ Notably, Prof. Simonson excluded the highest spending advertisers from multiple sectors, including retail, finance, home and décor, employment services, traditional media, SaaS, and streaming services.¹¹² Prof. Simonson has not demonstrated that the residual set of companies from which he drew his sample is representative of the overall population of U.S. advertisers. Given his exclusion of the largest digital advertisers across several industries, it seems improbable that his assertion is accurate.

- b. In addition to the above companies—in particular, relevant for Prof. Simonson’s Ad Agency Survey—he excluded the six largest global ad agencies: WPP, Publicis Groupe, Omnicom, Interpublic, Dentsu, and Havas, collectively known by the moniker “Big 6.”¹¹³ [REDACTED]

[REDACTED] Given the added exclusion of the Big 6, it is even more improbable that Prof. Simonson’s inbound sample includes the vast majority of spending among U.S. advertisers. Furthermore, Prof. Simonson has not demonstrated that despite excluding the Big 6, the sample for his Ad Agency Survey is representative.

¹¹¹ These firms were ranked within the top ten estimated digital advertising spend from January 2021 to July 2023 within their respective industries. These firms include Amazon, Target Corp., Walmart Inc., eBay, Lowe’s, Kohl’s, State Farm, American Express, Motley Fool, Wayfair Inc., Instacart, Monster Government Solutions Inc., LinkedIn, Fox Corp., The Washington Post, Warner Bros. Discovery (Brands include CNN and Max), BuzzFeed Inc., Bloomberg L.P., The New York Times Company, Match Group, Adobe Inc., Paramount Global, The Walt Disney Company, AT&T, Netflix, Comcast, and Hilton Worldwide Holdings Inc. Shannon O’Shea, “Which Companies Spend the Most on Digital Advertising? [Study]” *Semrush Blog*, accessed February 9, 2024, <https://www.semrush.com/blog/companies-spend-on-advertising-study/>. See also, “100 Biggest Spenders on Google Ads,” Seattle Organic SEO, accessed February 6, 2024, <https://seattleorganicseo.com/top-100-biggest-spenders-on-google-ads-2022/>. See also, Simonson Report, Appendix I.

¹¹² Amazon was reported as the highest spending firm in Retail, State Farm was reported as the highest spending firm in Finance, Target Corp. was reported as the highest spending firm in Home and Décor, Monster Government Solutions Inc. was reported as the highest spending firm in employment services, Fox Corp. was reported as the highest spending firm in Media, Adobe Inc. was reported as the highest spending firm in SaaS, and Paramount Global was reported as the highest spending firm in Streaming Services. All of these firms were excluded from Prof. Simonson’s survey. Shannon O’Shea, “Which Companies Spend the Most on Digital Advertising? [Study]” *Semrush Blog*, accessed February 9, 2024, <https://www.semrush.com/blog/companies-spend-on-advertising-study/>. See also, Simonson Report, Appendix I.

¹¹³ Gideon Spanier, “Big six global agency groups bounce back by adding 32,000 jobs in 2021,” US Campaign, March 8, 2022, <https://www.campaignlive.com/article/big-six-global-agency-groups-bounce-back-adding-32000-jobs-2021/1748929> (“The big six global agency groups...WPP, Publicis Groupe, Omnicom, Interpublic, Dentsu and Havas.”). See also, Simonson Report, Appendix I.

c. Prof. Simonson states that the ADPROs panel he used for his surveys includes “[q]uantitative and qualitative respondents covering the world’s top brands and agencies – including 100% of the Ad Age Top 200 Advertisers and controlling \$165B+ of annual ad spend.”¹¹⁵ Although that is true of ADPRO’s panel, cross-checking Prof. Simonson’s list of excluded advertisers against the Ad Age “200 biggest advertisers” reveals that nine of the top ten advertisers are on the “no contact” list (including Google’s parent Alphabet); 29 of the top 50 advertisers are on the “no contact” list (30 including Alphabet); and 58 of the top 200 (29 percent) are on the “no contact” list (59 including Alphabet).¹¹⁶ The 58 excluded companies comprised half of the total advertising spend of the 200 largest advertisers in 2022.¹¹⁷ Even if the ADPRO panel were to account for the vast majority of spending among U.S. advertisers, this is not the case for Prof. Simonson’s inbound sample.

68. Documents produced in this case also indicate that several of the companies excluded by Prof. Simonson are substantial revenue generators for Google. For example, a 2023 Google presentation on revenue includes a table that lists 15 companies and, what appears to be, Google’s earnings from each of these companies. The presentation refers to these 15 companies as the “Top Whales.”¹¹⁸ Prof. Simonson excludes nine of the so-called 15 “Top Whales.”¹¹⁹

[REDACTED]

[REDACTED]

[REDACTED] Prof. Simonson excludes three of these six companies from his surveys.¹²¹

69. Furthermore, Prof. Simonson did not instruct AP to restrict the number of respondents from the same company who can participate in his surveys. And there is no indication that the survey collected any data to evaluate whether multiple individuals from the same company were

¹¹⁵ Simonson Report, Section III.B., ¶ 31.

¹¹⁶ Crain Communications Inc., “Ad Age Leading National Advertisers 2023: 200 biggest advertisers,” June 26, 2023; Simonson Report, Appendix I.

¹¹⁷ Crain Communications Inc., “Ad Age Leading National Advertisers 2023: 200 biggest advertisers,” June 26, 2023.

¹¹⁸ See GOOG-AT-MDL-011124130, at -141; See also, GOOG-AT-MDL-011120632, at -641.

[REDACTED]

¹²⁰ See GOOG-DOJ-03047055, at -062.

[REDACTED]

contacted or completed the survey. As a result, Prof. Simonson has no way to ascertain whether two, five, ten, or more respondents in his final sample worked for the same company. Multiple respondents from a given company can reduce the representativeness of the sample for the broader target population, making it more reflective of that specific company or similar companies.

70. For the above two reasons and the additional reasons discussed previously in Sections III.A.1 through Section III.A.3, it is likely that the Prof. Simonson's survey samples are not representative of the targeted U.S. advertisers.

III.B. Professor Simonson's Key Survey Questions in His Main Questionnaires Are Likely to Result in Speculative and Unreliable Responses

71. In designing a survey that can provide meaningful results, it is necessary for the questions to be clear and understood by respondents as intended. Several academic studies on survey design, including one that Prof. Simonson himself references, emphasize the need for survey questions to be clear and easily understood by respondents:

Ambiguity should be avoided at all costs. If a question is ambiguous, the respondent may be presented with the dilemma of hearing or seeing two different questions and will not know which to answer....With self-administered questionnaires, respondents have to make their own decision as to what the question means. Either way, the researcher does not know which way the respondent has understood the question....¹²²

When unclear questions are included in a survey, they may threaten the validity of the survey by systematically distorting responses if respondents are misled in a particular direction, or by inflating random error if respondents guess because they do not understand the question. If the crucial question is

¹²² Ian Brace, *Questionnaire Design How to Plan, Structure, and Write Survey Material for Effective Market Research* 4th ed., (London: KoganPage, 2018): 161.

sufficiently ambiguous or unclear, it may be the basis for rejecting the survey.¹²³

The precise wording of questions plays a vital role in determining the answers given by respondents...[and]...[l]oaded words [p]roduce [l]oaded [r]esults...[and therefore]...a questionnaire writer can consciously or unconsciously word a question to obtain a desired answer.¹²⁴

72. Ignoring the above best practices, Prof. Simonson's surveys include questions that are unclear. In particular, one of his key questions that purports to address respondents' response to a cost increase in display advertising is, by his own admission, open to different interpretation by different respondents.¹²⁵ It therefore contains words that may be construed as "loaded."

III.B.1. Professor Simonson's Key Question on Diversion is Confusing and Likely to Elicit Biased Responses

73. One of the key questions in each of the three surveys asks respondents how they would respond if the cost of display advertising increased. For example, Q5 of the Higher-Spend Advertiser Survey asks:¹²⁶

¹²³ Shari Seidman Diamond, "Reference Guide on Survey Research," in *Reference Manual on Scientific Evidence*, 3rd ed. (Washington, DC: The National Academies Press, 2011), 359–423, at 388. *See also*, Floyd Jackson Fowler, Jr., "How Unclear Terms Affect Survey Data," *The Public Opinion Quarterly* 56, (1992): 218–231.

¹²⁴ Norman M. Bradburn, Seymour Sudman, and Brian Wansink, *Asking Questions: The Definitive Guide to Questionnaire Design—For Market Research, Political Polls, and Social and Health Questionnaires*, Revised Ed. (San Francisco: Jossey-Bass, 2004): 3, 5.

¹²⁵ *See* Simonson Report, Section IV.B.2., ¶ 65.

¹²⁶ Although the specific wording of the analogous question in the Lower-Advertiser Survey and Ad Agency Survey is slightly different, it is substantively similar and, unless otherwise noted, my comments about this question apply to the analogous questions in those surveys.

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Q5. Please read carefully. Now suppose that, based on your analysis, the cost of programmatic display advertising has recently increased by a small but significant amount, and will remain elevated for the foreseeable future. Assume further that, based on similar analyses for other digital advertising types, the costs of other digital advertising types have not changed and are not expected to change.

So if the cost of programmatic display advertising increases (while the cost of other advertising types remains the same), will you or won't you divert some of your advertising spending for the coming year to other types of digital advertising?

- Ⓐ Yes, I will divert some of my advertising spending for the coming year to other types of digital advertising
- Ⓑ No, I will **not** divert any of my advertising spending for the coming year to other types of digital advertising [SKIP TO Q8]
- Ⓒ Don't know / Unsure [SKIP TO Q8]

Source: Simonson Report, Appendix F.1, at F.1-13.

74. This question is flawed in multiple respects. First, the question leaves it up to each respondent to interpret in their own way what is being asked:

- a. By his own admission, Prof. Simonson wants each respondent to be thinking about a different increase in the cost of display advertising. He claims that the phrase *small but significant amount* “was designed to leave it to the respondent to consider their reaction, if any, if (what they consider to be) a ‘small but significant’ increase in the cost of programmatic display advertising occurred.”¹²⁷ Academic research on survey methodology indicates that consumers typically fail to attribute the same quantitative probability to words and phrases.¹²⁸ A given respondent could believe that the question is asking about a one or two percent increase, whereas another respondent could believe that the question is asking about a 20 percent cost increase or more. The interpretation of their survey answers would

¹²⁷ Simonson Report, Section II., ¶ 17, FN 5.

¹²⁸ See, e.g., Frederick Mosteller and Cleo Youtz, “Quantifying Probabilistic Expressions,” *Statistical Science* 5, no. 1 (1990): 2–34; Floyd Jackson Fowler, Jr., “How Unclear Terms Affect Survey Data,” *Public Opinion Quarterly* 56 (1992): 218–231; Norbert Schwarz, “Self-Reports: How the Questions Shape the Answers,” *American Psychologist* 54, no. 2 (1999): 93–105; Norbert Schwarz and Daphna Oyserman, “Asking Questions About Behavior: Cognition, Communication, and Questionnaire Construction,” *American Journal of Evaluation*, 22, no. 2 (2001): 127–160.

therefore be vastly different.¹²⁹ Surprisingly, Prof. Simonson views his inability to know what respondents view as a small but significant increase in the cost of display advertising as a feature, rather than a serious methodological flaw, in his survey design.¹³⁰ However, the variation in respondents’ beliefs of what constitutes a “small but significant amount” would lead to different responses to this question as to whether they would divert spending, (i.e., those who believe that this amount is higher would be more likely to divert) as well as to the subsequent questions that ask to which other types of digital advertising they would divert their spending and how much spending they would divert to those other types of digital advertising.

- b. The vagueness in question HSQ5 about how long the cost of display advertising would “remain elevated”—“for the foreseeable future”—also is likely to lead different respondents to have different interpretations of how long a period of time is being suggested.¹³¹ The question leaves it up to the respondents to decide whether “the foreseeable future” means until the next ad buy, for one year, forever, or something else. The respondents’ beliefs of what Prof. Simonson had in mind in asking the question is likely to affect their answer and lead to noise in the responses, depending on how an individual respondent interprets the question.¹³²

- 75. The second reason that the question is flawed is because it risks creating a *demand artifact*, which occurs when a question causes respondents to “perceive, interpret, and act upon what he believes is expected or desired of him by the experimenter” and provide answers that they

¹²⁹ See, e.g., Shari Seidman Diamond, “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, 3rd ed. (Washington, DC: The National Academies Press, 2011), 359–423, at 388. See also, Ian Brace, *Questionnaire Design How to Plan, Structure, and Write Survey Material for Effective Market Research*, 4th ed. (Northampton: Edward Elgar Publishing, Inc., 2018), 161–162.

¹³⁰ See Ian Brace, *Questionnaire Design How to Plan, Structure, and Write Survey Material for Effective Market Research* 4th ed. (Northampton: Edward Elgar Publishing, Inc., 2018), 163 (“Ambiguity can come about not just through offering options within a sentence. It also occurs because people understand a word differently”).

¹³¹ See, e.g., Shari Seidman Diamond, “Reference Guide on Survey Research,” in *Reference Manual on Scientific Evidence*, 3rd ed. (Washington, DC: The National Academies Press, 2011), 359–423, at 387–389. Ian Brace, *Questionnaire Design How to Plan, Structure, and Write Survey Material for Effective Market Research* 4th ed., (Northampton: Edward Elgar Publishing, Inc., 2018), 161.

¹³² See Ian Brace, *Questionnaire Design How to Plan, Structure, and Write Survey Material for Effective Market Research* 4th ed. (Northampton: Edward Elgar Publishing, Inc., 2018), 161, 163.

III.E. Professor Simonson's Surveys are Not Informative on the Key Questions Regarding Multi-homing and Diversion

104. As summarized in Section II, Prof. Simonson conducted three surveys that form the basis of his opinion that advertisers “multi-home across different types of digital advertising and within display advertising, through the use of multiple ad buying tools and platforms.”¹⁹¹ Prof. Simonson states that one of his key findings is “that most higher-spend advertisers use a variety of other digital advertising types and employ multiple ad buying tools for display advertising, suggesting they have a variety of alternatives to Google ad buying tools.”¹⁹²
105. I understand that with regard to advertisers, the relevant issue in this matter is the extent to which, and why, advertisers multi-home across different types of display *ad buying tools* and not across different types of *digital advertising* generally.¹⁹³ With regard to the former, Prof. Simonson's aforementioned conclusions are based on his survey respondents' indications that they had “used [two or more buying tools] during the past year for programmatic display advertising....”¹⁹⁴ Considering the limitations of this question, it is misleading to conclude, as Prof. Simonson does, that advertisers “employ multiple ad buying tools”¹⁹⁵ because it does not ask respondents about the degree to which they make use of the different display ad buying tools. Thus, advertisers could overwhelmingly depend on Google's display ad buying tools but test, and reject, one or more non-Google product in the past 12 months and Prof. Simonson's survey would conclude that these advertisers multi-home across different types of display advertising buying tools. In fact, in response to Prof. Simonson's open-ended question HSQ9 “Why did you

¹⁹¹ Simonson Report, Section II., ¶ 18.

¹⁹² Simonson Report, Section IV.D., ¶ 110.

¹⁹³ Lee Initial Report, Section III.C., ¶ 185 (“Publishers and advertisers may use multiple ad tech products for a given purpose. For example, an advertiser may choose to use multiple DSPs, and a publisher may similarly elect to sell its remnant display inventory through multiple exchanges. In economics, this type of behavior is referred to as ‘multihoming.’”); Section IV., ¶ 245 (“Note that the relevant product markets do not contain the underlying display advertisements themselves, but rather the ad tech products used to serve and transact these ads.”); Section IV.B., ¶ 262 (“Establishing the importance of open-web display advertising compared to other forms of advertising supports each of the relevant product markets that I discuss in Sections IV.C–IV.E below. This is because if open-web display advertising is distinct and valuable for open-web publishers and advertisers, then these customers would have limited ability to substitute away from *products used to transact such advertising* if those products were priced higher than competitive levels.”) (emphasis in original).

¹⁹⁴ Simonson Report, Section IV.B.2., ¶ 69.

¹⁹⁵ Simonson Report, ¶¶ 18, 109-110, 159, 205-206.

and/or your business unit/team use more than one ad buying tool for programmatic display advertising in the past year?” several respondents provided responses that described testing.¹⁹⁶

106. For the sake of argument, even if Prof. Simonson’s survey (as designed) allowed him to infer that respondents use two or more display ad buying tools, it would still be a leap to conclude as Prof. Simonson does that his findings “suggest[] [advertisers] have a variety of alternatives to Google ad buying tools.”¹⁹⁷ That advertisers use two or more ad buying tools by itself does not imply that the ad buying tools are alternatives. Instead, two or more ad buying tools could also be complements. For instance, advertisers may choose to use two ad buying tools because it allows them to reach different audiences, or to supplement their existing ad inventory, or to diversify and avoid depending on any single ad buying tool. While each of these examples can lead advertisers to use two or more ad buying tools, neither suggests that advertisers view the ad buying tools as alternatives. In fact, in response to Prof. Simonson’s open-ended question HSQ9 “Why did you and/or your business unit/team use more than one ad buying tool for programmatic display advertising in the past year?” several respondents provided responses that were consistent with the different ad buying tools being complements.¹⁹⁸
107. Based on his survey findings, Prof. Simonson also concludes that advertisers and ad agencies would reallocate some portion their advertising spending from display advertising to other types of digital advertising if “the cost of **programmatic display advertising** has **recently increased by a small but significant amount, and will remain elevated for the foreseeable future.**”¹⁹⁹ Setting aside the methodological flaws with the framing of the underlying survey question, which I address separately in Section III.B above, I understand that the cost of display advertising is not at issue in this matter, which could include for example the cost of designing

¹⁹⁶ See e.g., responses to HSQ9 (“We tested them out at different times,” “Testing,” “Like to test different options,” “we were testing out both,” “Test which performed the best”). Simonson Backup, Appendix F.3 – Higher-Spend Advertiser Survey Raw Data.

¹⁹⁷ Simonson Report, Section IV.D., ¶ 110.

¹⁹⁸ See, e.g., responses to HSQ9 (“COMPLEMENTARY, FEES...,” “Both platforms marry well,” and “Different ad buying tools may have different functions and features”) and AAQ8 (“Complementary, testing...,” “Different capabilities and targets,” and “Using a variety of tools allowed us to take advantage of unique features and optimizations offered by each platform”). Simonson Backup, Appendix F.3 – Higher-Spend Advertiser Survey Raw Data and Appendix H.3 – Agency Survey Raw Data.

¹⁹⁹ Simonson Report, Appendix F.1, Q5, at F.1-13 (emphasis in original).

the underlying creatives. Rather, I understand that what is relevant is the portion of those costs that corresponds to specific ad tech tools that advertisers use to transact programmatic display advertising (given that Prof. Simonson’s surveys were limited to advertisers), which is a specific component of the total programmatic display advertising cost.²⁰⁰ None of the three surveys conducted by Prof. Simonson asked respondents what they would do if faced by a small but significant increase in the fee charged by a particular display ad buying tool. As a result, the survey responses in Prof. Simonson’s surveys are not informative with regards to what advertisers would have done if faced with higher fees for specific display ad buying tools, much less Google’s display ad buying products.

108. Prof. Simonson’s surveys ask respondents about their response to a change in the cost of the entire category of programmatic display advertising. However, I understand that a key issue in this matter is not the entire “cost of programmatic display advertising;” rather it is only Google’s (or competitors’) fees which comprise only one part of the “cost of programmatic display advertising.” Thus, Prof. Simonson’s scenario in which “the cost of **programmatic display advertising** has **recently increased by a small but significant amount, and will remain elevated for the foreseeable future**,”²⁰¹ (emphasis in original) presents respondents with a stimulus that is not germane to the issues in this case.
109. Because the cost of a particular ad buying tool comprises only one part of the total cost of programmatic display advertising, a “small but significant” increase in the cost of a particular ad buying tool would result in a much smaller increase than a small but significant increases in the “cost of programmatic display advertising.” Moreover, I understand that that ultimately advertisers bear approximately 20 percent of an increase in Google’s fee²⁰²—the remainder being

²⁰⁰ See Lee Initial Report, Section IV.B., ¶ 262 (“Establishing the importance of open-web display advertising compared to other forms of advertising supports each of the relevant product markets that I discuss in Sections IV.C–IV.E below. This is because if open-web display advertising is distinct and valuable for open-web publishers and advertisers, then these customers would have limited ability to substitute away from *products used to transact such advertising* if those products were priced higher than competitive levels.”) (emphasis in original); See also, Expert Rebuttal Report of Robin S. Lee, Ph.D., United States of America, et al., v. Google LLC, Civil Action No. 1:23-cv-0108, February 13, 2024, Section IV.B.

²⁰¹ See Simonson Report, Appendix F.1, Q5, at F.1-13; Appendix G.1, Q9, at G.1-13; Appendix H.1, Q4, at H.1-12.

²⁰² Simcoe Initial Report, Section I.C., ¶ 12.

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121. In addition, relying on only three to five respondents for each questionnaire can be problematic. A key question is how representative these very small samples of individuals and their responses are of the target population. For example, in each of his three surveys, in QS9, Prof. Simonson asks respondents to identify their job title/level and offers them 12 different response options (five of these have multiple titles included in the same answer option). Given that only three to five pretests were conducted for each survey, Prof. Simonson would not be able to ascertain whether survey respondents in each of 10 plus job titles are likely to possess the required knowledge and information to respond accurately to his questions. Assuming each subject from the pretests of each survey had a distinct job title, Prof. Simonson could at best verify this information for only the three to five unique job titles represented in his pretests.
122. Prof. Simonson also failed to provide any demographic or other information about pretest respondents. Without details like demographics, work responsibilities, or job titles, it is not possible to determine the representativeness of the sample, the relevance of the respondents' feedback or the validity of the conclusions drawn from the pretests.

A handwritten signature in black ink, appearing to read "Wayne D. Hoyer", with a horizontal line underneath the signature.

Wayne D. Hoyer, Ph.D.

Date: February 13, 2024

Expert Rebuttal Report of Wayne Hoyer (February 13, 2024)--Errata

Page	Paragraph	Footnote	Original	Corrected	Reason
Title Page	.	.	"February 13, 2023"	"February 13, 2024"	Correction
11	19	16	"AP was instructed to exclude respondents who worked for any companies "that were parties to, were identified on initial disclosures in, or that have received subpoenas in connection with United States v. Google LLC, No. 1:23-cv-00108 (E.D. Va.) or the cases consolidated in In re Google Digital Advertising Antitrust Litigation, No. 1:21-md-03010 (S.D.N.Y.), including Texas v. Google LLC, No. 4:20-cv-00957 (E.D. Tex.).""	"AP was instructed to exclude respondents who worked for any companies "that are parties to, were identified on initial disclosures in, or that have received subpoenas in connection with United States v. Google LLC, No. 1:23-cv-00108 (E.D. Va.) or the cases consolidated in In re Google Digital Advertising Antitrust Litigation, No. 1:21-md-03010 (S.D.N.Y.), including Texas v. Google LLC, No. 4:20-cv-00957 (E.D. Tex.).""	Correction
27	49		[A]: [1],[4],[7],[9]-[10],[14]: Industries identified through keyword search in Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data, Question QS7oe. [A]: [2]-[3],[5]-[6],[8],[11]-[13],[15]-[20]: Industries identified in Appendix F.3, Question QS8. [A]: [21]: Responses not matching any keyword search in [1]-[20]. [B]: Count determined by keyword search of [A] in response QS7r5oe.	[A]: [1],[4],[7],[9]-[10],[14]: Industries identified through keyword search in Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data, Question QS7oe. [A]: [2]-[3],[5]-[6],[8],[11]-[13],[15]-[20]: Industries identified in Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data , Question QS8. [A]: [21]: Responses not matching any keyword search in [1]-[20]. [B]: Count determined by keyword search of [A] in Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data, Question QS7oe.	Clarification
34		105	See, e.g., GOOG-AT-MDL-B-001296996 at -966 (11/15/2018) ("we don't have a very high degree of confidence in the fidelity of [Advertiser Perception's] research / methodologies., in just about every survey there is a crazy data point that doesn't make much sense (and which they can't explain) and calls into question the validity of their work overall.").	See, e.g., GOOG-AT-MDL-B-001296996 at -966 (11/15/2018) ("we don't have a very high degree of confidence in the fidelity of [Advertiser Perception's] research / methodologies... in just about every survey there is a crazy data point that doesn't make much sense (and which they can't explain) and calls into question the validity of their work overall.").	Typo
37		114	See GOOG-AT- MDL-008286018 , at 899 (03/27/2022). (4,933-1,644) / 4,933 = 66.67.	See GOOG-AT- MDL-008285890 , at 899 (03/27/2022). (4,933-1,644) / 4,933 = 66.67.	Correction

Expert Rebuttal Report of Wayne Hoyer (February 13, 2024)--Errata

Page	Paragraph	Footnote	Original	Corrected	Reason
43		137	Moreover, as discussed in Paragraph 115, Prof. Simonson did not ask this question until after the pretest subjects completed the entire survey.	Moreover, as discussed in ¶ 115, Prof. Simonson did not ask this question until after the pretest subjects completed the entire survey.	Typo
52	83	.	"provide answers that the survey's sponsor might not refer "	"provide answers that the survey's sponsor might not prefer "	Typo
54	89		Prof. Simonson included fictional or "decoy" responses in some of his survey questions "to assess the amount of 'false recognition' in the survey results, which may reflect...misremembering or inattention.... "163	Prof. Simonson included fictional or "decoy" responses in some of his survey questions "to assess the amount of 'false recognition' in the survey results, which may reflect...misremembering or inattention. "163	Typo
56	92	.	"40 respondents (eight percent) of the respondents who"	"40 (eight percent) of the respondents who"	Typo
57	95	.	"(or, in some many questions, multiple correct response options)"	"(or, in some questions, multiple correct response options)"	Typo
59	97		Sources and Notes: [A]: Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data, QTime . [B]: Simonson Backup, Appendix G.3 - Lower-Spend Advertiser Survey Raw Data, QTime . [C]: Simonson Backup, Appendix H.3 - Agency Survey Raw Data, QTime . The table is reported in minutes and seconds from the variable, qtime. The sample used is the Analytical Sample (removing speeders and slow-pokes), with a sample size of 502 respondents in the Higher-Spend Advertiser Survey, 302 in the Lower-Spend Advertiser Survey, and 381 in the Ad Agency Survey.	Sources and Notes: [A]: Simonson Backup, Appendix F.3 - Higher-Spend Advertiser Survey Raw Data, qtime . [B]: Simonson Backup, Appendix G.3 - Lower-Spend Advertiser Survey Raw Data, qtime . [C]: Simonson Backup, Appendix H.3 - Agency Survey Raw Data, qtime . The table is reported in minutes and seconds from the variable, qtime. The sample used is the Analytical Sample (removing speeders and slow-pokes), with a sample size of 502 respondents in the Higher-Spend Advertiser Survey, 302 in the Lower-Spend Advertiser Survey, and 381 in the Ad Agency Survey.	Typo

